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TITLE : POSITIVE ELECTRODE ACTIVE MATERIAL FOR LITHIUM SECONDARY BATTERY AND ITS MANUFACTURE, POSITIVE ELECTRODE FOR LITHIUM SECONDARY BATTERY USING THE POSITIVE ELECTRODE ACTIVE MATERIAL AND ITS MANUFACTURE, AND LITHIUM SECONDARY BATTERY USING THE POSITIVE ELECTRODE AND ITS MANUFACTURE

ABSTRACT : PROBLEM TO BE SOLVED: To obtain a positive electrode active material having a reinforced crystal structure of lithium-nickel compound oxide, and to provide a positive electrode for a lithium secondary battery and the lithium secondary battery allowing improvement a cycle characteristic and a load characteristic.

SOLUTION: This positive electrode active material for a lithium secondary battery includes a lithium-nickel-manganese compound oxide or a lithium-nickel- manganese-M compound oxide represented by a composition formula $\text{Li}_a\text{MnbMcNi}_{1-(b+c)}\text{O}_2$ having a peak in a range of $2\theta = 18.71 \pm 0.25^\circ$ with a half- value width of $0.15\text{--}0.22^\circ$ in powder X-ray diffraction measurement using $\text{Cu-K}\alpha$ as an X-ray source, wherein M is a kind of element selected among B, Al, Fe, V, Cr, Cu, Ga, Ca, Mg, Sr and Ti, $0 < a < 1.2$, $0.05 \leq b \leq 0.45$, $0 \leq c \leq 0.45$, and $0.5 \leq 1-(b+c) \leq 0.95$.

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